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EXPLANATION OF SIGNIFICANT DIFFERENCES TO THE RECORD OF DECISION

OPERABLE UNITS 2 AND 9

RUBBLE DISPOSAL AREA

NAVAL AIR STATION SOUTH WEYMOUTH

WEYMOUTH, MASSACHUSETTS

NOVEMBER 2011

STATEMENT AND PURPOSE AND AUTHORIZING SIGNATURES

This decision document explains the basis for the determination to issue the attached Explanation of Significant Differences (ESD) to the Record of Decision (ROD) regarding the Rubble Disposal Area (RDA), which is located at the former Naval Air Station (NAS) South Weymouth, Massachusetts.

For the reasons documented herein, by my signature below, I approve the issuance of this ESD for Operable Units 2 and 9, the RDA, at the NAS South Weymouth Superfund Site and the changes stated therein. Concur and recommended for immediate implementation:

U.S. Department of the Navy

By: _____ Date:_____

David A. Barney
BRAC Environmental Coordinator
Naval Air Station South Weymouth
U.S. Navy

Concur and recommended for immediate implementation:

By: _____ Date:_____

James T. Owens III
Director, Office of Site Remediation and Restoration
U.S. Environmental Protection Agency, Region I

EXPLANATION OF SIGNIFICANT DIFFERENCES
OPERABLE UNITS 2 AND 9 – RUBBLE DISPOSAL AREA
NAVAL AIR STATION SOUTH WEYMOUTH, MASSACHUSETTS

1.0 INTRODUCTION TO THE SITE AND STATEMENT OF PURPOSE

1.1 Site Name and Location

Naval Air Station South Weymouth
1134 Main Street
Weymouth, Massachusetts 02190
MA2170022022
Operable Units 2 and 9 – Rubble Disposal Area

1.2 Identification of Lead and Support Agencies

The U.S. Navy is the lead agency for all environmental investigations and cleanup programs at NAS South Weymouth. The lead regulatory agency is the U.S. Environmental Protection Agency Region 1 (EPA). The Massachusetts Department of Environmental Protection (MassDEP) provides additional regulatory agency support.

1.3 Legal Authority

Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), if EPA determines that the remedial action at a site differs significantly from the Record of Decision (ROD) for that site, then an explanation of the significant differences between the remedial action being taken and the remedial action set forth in the ROD shall be published which includes the reasons such changes are being made. Section 300.435(c) of the National Contingency Plan (NCP) and EPA guidance (OSWER Directive 9355.3-02) indicate that an ESD rather than a ROD Amendment is appropriate where the changes do not fundamentally alter the overall remedy with respect to scope, performance, or cost. Because the adjustments to the remedial action do not fundamentally alter the overall remedy for the ROD, this ESD is being properly issued.

In accordance with Section 300.825(a)(2) of the NCP, this ESD will become part of the Administrative Record for the RDA and is also available for public review at the NAS South Weymouth Caretaker Site Office (Building 11, Shea Memorial Drive) and the local Information Repositories identified below. In addition, a notice that briefly summarizes this ESD will be published in the major local newspapers of general circulation.

1.4 Overview of the ESD

The December 2003 ROD for the RDA (the Site) specified excavation of PCB-impacted soil, construction of a 4-acre soil cap for the landfill, long-term monitoring (LTM), institutional controls (ICs), and 5-year reviews. These remedial measures addressed the identified potential risks to small mammals from exposure to PCBs in hydric soil; addressed the potential risks to humans from consuming groundwater without standard, municipal-level treatment; and met all pertinent state landfill closure regulations.

The following alterations to the existing remedy and its components are necessary to allow the construction of the planned East West Parkway:

- Removal, replacement, and realignment of certain Engineering Controls (post and rail fence).
- Removal, and replacement of certain monitoring wells and stations.
- Alteration of the low permeability soil cover's perimeter drainage swale.

The adjustments presented in this ESD to the ROD do not fundamentally alter the overall Remedial Action for the RDA with respect to scope, performance, or cost.

1.5 Availability of Documents

In accordance with Section 300.825(a)(2) of the NCP, this ESD will become part of the Administrative Record for the RDA. This ESD is also available for public review at the following locations:

Department of the Navy
Caretaker Site Office
c/o David Barney
1134 Main Street, Building 11
South Weymouth, MA 02190

Tufts Library
46 Broad Street
Weymouth, MA 02188
(781) 337-1402

Abington Public Library
600 Gliniewicz Way
Abington, MA 02351
(781) 982-2139

Hingham Public Library
66 Leavitt Street
Hingham, MA 02043
(781) 741-1405

Rockland Memorial Library
336 Union Street
Rockland, MA 02370
(781) 878-1236

2.0 SITE HISTORY, CONTAMINATION AND SELECTED REMEDY

2.1 Site Description and History

NAS South Weymouth is located approximately 15 miles southeast of Boston, Massachusetts in Norfolk and Plymouth Counties. Portions of NAS South Weymouth are located in the Towns of Weymouth, Abington, and Rockland (Figure 1). NAS South Weymouth was operationally closed on September 30, 1996 and administratively closed on September 30, 1997 under the Base Realignment and Closure Act of 1990.

The RDA is a closed landfill covering approximately 4 acres in the eastern portion of the NAS South Weymouth property, east of Runway 8-26 (Figure 2). Roads and trails are located to the north and west of the Site and forested uplands are located south of the Site. The RDA is bound to the east by palustrine wetlands that border Old Swamp River. The river flows to the north and passes through four 10-foot wide corrugated metal conduits located underneath an existing access road along the northeast corner of the landfill. A small intermittent stream, described as a feeder stream, discharges into Old Swamp River just north of the metal conduits. A second feeder stream borders the RDA to the south and east, entering the palustrine wetland, and flowing north prior to discharging into Old Swamp River.

The Navy disposed of natural debris (e.g., boulders and tree stumps) and building debris (e.g., concrete and other construction materials) in the area during development and operation of NAS South Weymouth. The RDA was used for approximately 4 years between 1959 and 1962 and again for a short period in 1978. Between 1959 and 1962, the RDA was used for disposal of large natural debris (described above) and tree stumps that were unsuitable as base-material for construction of earthen bridge abutments and roadways. In 1978, partially burned building debris and associated rubble from Building 21, which was destroyed by fire, were placed in the RDA. In addition to these two uses of the Site, there have been unofficial reports that transformers, transformer components, or transformer fluids were disposed of at the RDA. Materials observed at the Site during environmental investigations included glass, insulation

material, concrete, scrap metal, wire, asphalt, rubber, fabric, boulders, and wood. There are no records of hazardous waste, regulated under Subtitle C of the Resource Conservation and Recovery Act (RCRA), being disposed of at the RDA.

Following completion of the ROD in 2003, the Navy constructed an engineered, vegetated soil cap over the RDA (soil cap). A locked, metal swing gate is located at the landfill entrance to the west. Surrounding the landfill is a wooden railing approximately 3.5 feet high; storm water controls consisting of drainage swales and rip-rap slope protection are also located along the perimeter of the landfill. A passive landfill gas management system is present and consists of eight gas vent (GV) pipes and seven gas probes (GP). The vent pipes were installed through the landfill cap; the gas probes were installed outside the limits of the cap adjacent to the western and northwestern landfill boundary. Ten groundwater monitoring wells (MW), nine piezometers (PZ), and eight staff/stream gauges (G) are located on and in the vicinity of the Site. Regional groundwater flow in the area of the RDA is generally to the east, toward Old Swamp River.

2.2 Enforcement History

In May 1994, NAS South Weymouth was listed on EPA's National Priorities List (NPL). Environmental studies and activities at NAS South Weymouth have been conducted by the Navy in accordance with CERCLA and NCP.

Based on the designation of the NAS South Weymouth property as an NPL site, a Federal Facility Agreement (FFA) was executed by the Navy and EPA. The FFA became effective in April 2000 and established the Navy as the lead agency for the investigation and cleanup of NAS South Weymouth property, with EPA providing oversight. The MassDEP is not a party to the FFA but, in accordance with CERCLA and the NCP, MassDEP has participated in ongoing discussions and strategy sessions, as well as provided oversight and guidance through their review of the Navy's Installation Restoration Program documents.

In accordance with the FFA, a Site Management Plan (SMP) with task schedules and deliverables is updated annually each summer. The SMP serves as a management tool for planning, reviewing, and setting priorities for environmental investigative and remedial response activities to be conducted at NAS South Weymouth. The SMP is available for public review at the NAS South Weymouth information repositories listed in Section 1.5 of this ESD.

2.3 Site Contamination

Soil

With respect to soil, the results of the ecological risk assessment indicated potential adverse effects to small mammals based on exposure (ingestion) of PCBs. Following completion of the ROD, the Navy excavated and properly disposed offsite approximately 54 cubic yards of PCB-impacted hydric soil to mitigate that risk. Post excavation sampling indicated that cleanup goals were achieved, leaving no samples with PCB concentrations greater than 8 mg/kg (ecological risk-based cleanup goal); the arithmetic mean of post excavation samples was below 1 mg/kg (literature-based risk screening value).

Groundwater

In groundwater, unacceptable risks were associated with hypothetical future residents consuming site groundwater containing arsenic, benzo(a)pyrene, and manganese. Cleanup goals for these chemicals were established as the federal Maximum Contaminant Levels (MCLs) or non-zero Maximum Contaminant Level Goals (MCLGs) under the Safe Drinking Water Act or, if lower, the state MCLs under the Massachusetts Office of Research and Standards. In the absence of such standards, a risk-based standard was calculated.

Landfill Gas

The Landfill Gas Investigation Report prepared by Tetra Tech in July 2011 stated that based on 83 sampling locations, 68 percent showed methane concentrations below the lower explosive limit (LEL) and 31 percent had methane concentrations above 25 percent of the LEL. One location showed methane concentrations between 10 percent and 25 percent of the LEL.

If methane concentrations are present above the LEL or other risk based thresholds for methane established for the work area, they could represent a health and safety concern or threat. The detection of methane above 25% of the LEL is in violation of the Massachusetts Department of Environmental Protection (MassDEP) thresholds, as per 310 CMR 19.132(4)(h) and possibly other regulations or guidance and may trigger a notification threshold to the MassDEP. If methane is present above the Upper Explosive Limit (UEL), an explosion hazard could still exist, since if diluted, concentrations could be within ranges deemed a hazard.

Since elevated methane levels (greater than 25 percent of the LEL) were detected in the vicinity of the Project, the Contractor has been notified of this potential hazard, and proper health and safety precautions are being developed and implemented per applicable federal and state regulations and standards.

2.4 Remedy Selected in the 2003 ROD

The December 2003 ROD for the RDA specified the following components:

- Removal and offsite disposal of approximately 54 cubic yards of PCB-impacted hydric soil from the adjacent wetland area to protect ecological receptors;
- Construction of a 4-acre soil cap over the onsite disposed material to meet state regulations for landfill closure;
- Site maintenance and long-term monitoring (LTM) as required under state landfill closure regulations;
- ICs to restrict intrusive activities on the landfill cap and prevent human exposure to groundwater beneath the landfill containing contaminant concentrations greater than federal and state drinking water standards; and
- 5-year reviews by the Navy to ensure that the selected remedy continues to be protective of human health and the environment.

During construction of the soil cap in 2004-2005, additional PCB-impacted soil was identified in an upland area near the northeast end of the landfill. The Navy excavated the additional soil and properly disposed of it at an offsite, licensed facility. Petroleum-impacted materials were detected in the wetland in the vicinity of the east-central portion of the landfill. Remedial actions were taken to protect potential ecological receptors from exposure to these materials. Additional details can be found in the Final Remedial Action Completion Report for the RDA.

2.5 Explanation of Significant Differences, August 2010

Upon a written request from EPA in October 2008 the Navy finalized an Explanation of Significant Differences (ESD) in August of 2010 with subsequent EPA concurrence. The ESD provided administrative changes to the Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered (TBC) provisions of the ROD. Additionally, the ESD augmented the 2003 ROD with the implementation of a Monitored Natural Attenuation remedy for groundwater. This further prompted the

establishment of an interim Land Use Control boundary as provided via an amendment to the Land Use Control Implementation Plan (LUCIP) in September 2010.

3.0 BASIS FOR THE DOCUMENT

A Land Use Controls Implementation Plan (LUCIP) was prepared for the RDA and finalized in October 2009. The LUCIP was then amended in September, 2010. The LUCIP was developed as part of the remedial design for the RDA to address land use control implementation actions in accordance with the ROD and the FFA for NAS South Weymouth. As stated in the Navy Principles, Land Use Controls (LUCs) are used at sites where contaminants are left in place at levels that do not allow for unrestricted use to ensure that any remaining contaminants do not pose an unacceptable risk to human health and the environment. LUCs can consist of institutional controls and/or engineering controls. Institutional controls, such as restrictions, notifications, etc., are typically legal documents in the form of deed restrictions, easements, and restrictive covenants. In the form of a legal document, the institutional controls will run with the land. Engineering controls are typically barriers, such as the fence and gate at the RDA. The institutional controls include certain restrictions on the uses and activities, including any use or activity which would be reasonably likely to interfere with the implementation, effectiveness, integrity, operation or maintenance of the permeable soil cap or any other cap, cover, or ground cover feature of the RDA Land Use Control area, as well as riprap, fences, gates, gas vents, gas probes, monitoring wells, piezometers and staff gauges, etc.

The RDA is located immediately south of the proposed East-West Parkway (the Project), which consists of the construction of a parkway alignment that will be approximately 2.75 miles long. The proposed Project is adjacent to the RDA along Stations 103+00 to 111+00. Exhibit A (attached) shows the construction area in relation to the RDA and the limits of the disturbance area.

As shown on Exhibit A, a total of four 10 foot diameter corrugated metal conduits are located below the current gravel roadway and are used to convey water from the southern wetland area to the northern wetland area. It is proposed that the upper portion of the westernmost corrugated metal conduit which is located under the Old Swamp River Bridge be removed for construction of the Project. The westernmost corrugated metal conduit is located within the northeastern boundary of the RDA; however, the soil cap will not be disturbed during the removal of the upper portion of the westernmost conduit. The three remaining corrugated metal conduits which are located east of the westernmost corrugated metal conduit will be completely removed. The northern portion of the westernmost corrugated metal conduit will be completely removed beginning approximately 30 feet north of the RDA.

In addition, one piezometer, RDA-PZ05, that was installed adjacent to the RDA as a component of the post-closure long-term monitoring program, will need to be reconfigured as part of construction of the Project, as it is located immediately west of the westernmost corrugated metal conduit which is also proposed to be removed. Its location will remain unchanged, but the elevation of the well head may need to be adjusted to match the new grading in that area.

A portion of the timber guardrail that was installed during the implementation of the ROD for the RDA will need to be removed for construction of the Project. The timber guard rail will be removed from Sta. 109+63 easterly to its end. All leftover timber guardrail will be returned to Navy. It will be replaced with a steel guardrail that has been designed for the Project starting at Sta. 109+63 and continuing easterly to the new bridge abutment and will include appropriate signage as required in the ROD. Silt fencing has been installed throughout the project to exclude box turtles from the construction zone. When the wood guard rail is removed, the silt fence will likely be temporarily removed to allow access to work on the wood guard rail. Once the wood guard rail is removed, the silt fence will be reinstalled in the same location to prevent turtle access and maintained through the rest of the project construction. After the steel guard rail is installed, the permanent wire wildlife barrier fence will be installed behind the guard rail. Until the permanent wildlife fence is installed, silt fence will be maintained along the project limits.

Surface water will be encountered on site and will need to be managed as part of the culvert removal activities. However, no groundwater management is anticipated within the permanent or interim LUC boundaries.

The 2010 surface water analytical results for surface water sampling location RDA-SWD located immediately north of the metal conduits in the feeder stream river channel are presented in the Draft Long Term Monitoring Annual Report for the RDA for the year 2010 (dated February 2011). There were no detections of volatile organic compounds (VOCs), volatile petroleum hydrocarbons (VPH), polycyclic aromatic hydrocarbons (PAHs), or pesticides in either sampling result above the laboratory reporting limits. In addition, all metals were shown to be either below the laboratory reporting limits or below the National Pollutant Discharge Elimination System (NPDES), Remediation General Permit (RGP), Total Recoverable Metal Limit in Massachusetts freshwaters. Therefore, based on this data, surface water does not present a human health risk to site workers performing work associated with this ESD.

4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCES OR NEW ALTERNATIVES

The proposed activities within the permanent and interim institutional control boundaries of the RDA are needed as part of the removal of four 10-foot diameter culverts that convey Old Swamp River (OSR) and the associated restoration of the OSR corridor. Since a portion of the permanent and interim institutional control boundaries of the RDA crosses over the two western most culverts, removal of the culverts will necessarily involve work within the permanent and interim institutional control boundaries of the RDA and adjacent to the landfill. There is no unpermitted work within delineated wetlands associated with this ESD.

4.1 Proposed Work Activities

In general, the proposed activities will include excavation, grading, filling, planting and seeding, placement of riprap and installation of metal guard rail partially within the permanent institutional control boundary but outside the assumed location of the soil cap. Removal of the culverts will require excavating down to expose the culverts, unbolting and cutting the culvert sections and removal of the steel culvert sections. The lower portion of the western most culvert will be left in place to serve to retain the fill materials of the landfill and cap and avoid disturbing the landfill to the extent possible. The portion of the culvert to remain will be backfilled with compacted ordinary borrow to bury the culvert section and covered with loam and seeded.

The existing riprap drainage channel that conveys runoff from the landfill cap will be maintained, with the eastern edge contoured and restored once the culverts are removed. The eastern edge of the riprap channel will be elevated slightly to ensure flow in the channel continues to be directed to the south and to the OSR. The riprap swale will be extended to the edge of the OSR at the lower (southern) end of the existing swale by placing additional stone after removal of the culvert. A small area of additional riprap will also be placed in the northeast corner of the permanent institutional control boundary to extend a stabilized swale toward the Parkway that will collect and direct any excess runoff from the roadway. The voids of the existing riprap channel will be infilled with ¾-inch crushed stone to provide a turtle compatible surface to allow passage of box turtles without creating a trap hazard in the rock voids. No dewatering is anticipated to complete these construction activities. All excavation activities are assumed to be outside the soil cap boundary, however, some grading and filling within the cap boundary may be needed which should not affect soil cap integrity.

Additional activities within the permanent institutional control boundary will include removal of the existing wood guard rail from Sta. 109+63 easterly to the end. A steel guard rail will be installed from Sta. 109+63 to the new bridge abutment, to restrict vehicle access. The proposed design incorporates both a steel guard rail and a three foot high chain link fence that will both be placed along the edge of the roadway in

the locations where the wood guard rail is proposed to be removed. This will restrict both vehicular and pedestrian access to the landfill from the roadway. Therefore, the existing wood guard rail will be extraneous in the location where it is proposed to be removed. The signage in this area will also be reposted along the LUC boundary to enforce the restricted access.

The limit of the landfill cap is the centerline of the riprap swale that lies around the edge of the landfill. The landfill contents are interior of this line and will not be disturbed by this action. Excavation and grading associated with the removal of the culverts was intentionally designed to avoid impacting the soil cap and any excavations will remain outside the riprap swale centerline and therefore should not impact the soil cap integrity. Work within the permanent institutional control boundary and inside the swale centerline will include placement of ¾-inch stone to infill the voids of the existing riprap and allow turtles to access the soil cap. The geotextile fabric located underneath the RDA soil cap extends beneath the northern swale to beyond the centerline of the swale. If the geotextile fabric is impacted by the proposed work, it will be repaired or replaced.

Two piezometers used in the monitoring of the landfill are in close proximity to the proposed grading and culvert removal activities. At the downstream end of the culverts stream piezometer and staff gauge RDA-SPZ102/RDA-G102 is between the middle two culverts. Piezometer RDA-PZ05 is west of the culverts and within the area of excavation and grading needed to restore the OSR channel. During construction efforts will be undertaken to preserve these piezometers in place. However, it may be necessary to remove these piezometers to allow construction activities to be completed. If removed, these piezometers will be replaced as previously constructed, and in their original location. Along the edge of the permanent institutional control boundary on the north side, Gas probe GP-01 is close to the limit of work. This Probe is not anticipated to be impacted and will be protected during construction. The locations of the piezometers and the gas probe are illustrated on the ESD Project Plan (Exhibit A).

5.0 SUPPORT AGENCY COMMENTS

EPA and MassDEP review comments will be included in the final draft of this document, as they become available.

6.0 STATUTORY DETERMINATIONS

Considering the above-described adjustments to the selected remedy set forth in the 2003 ROD and the September 2010 amended LUCIP, the Navy believes that the remedy remains protective of human health and the environment.

7.0 PUBLIC PARTICIPATION

Navy regularly meets to discuss the status and progress of the Installation Restoration Program with the Restoration Advisory Board (RAB), which includes representatives from the local community. Discussion of the ESD will be included in the next RAB meeting and meeting minutes and comments will be provided in the final draft of this document.

Exhibit A

ESD Project Plan

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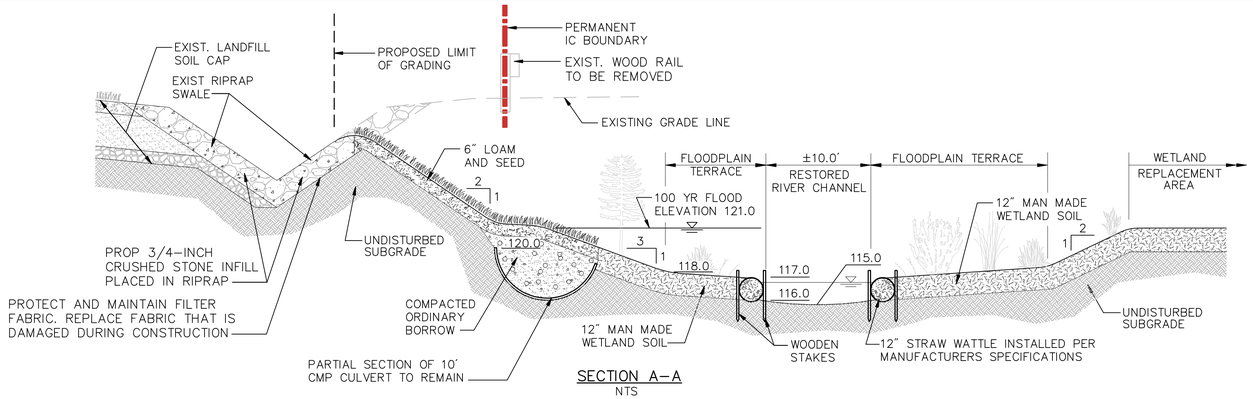
ROCKLAND
EAST/WEST PARKWAY – PHASE 1
ESD PROJECT PLAN

South Shore Tri-Town Development Corporation

Barletta Heavy Division
Canton, Massachusetts

Vanasse Hangen Brustlin, Inc.
Transportation | Land Development | Environmental Services
101 Walnut Street, Watertown, Massachusetts 02471



SECTION A–A
NTS

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RDA–SPZ102/RDA–G102
RDA–SWD

PARKWAY DRAINAGE IS COLLECTED IN A CLOSED DRAINAGE SYSTEM THAT FLOWS TO THE EAST OF OLD SWAMP RIVER AND IS TREATED IN A CONSTRUCTED STORMWATER WETLAND PRIOR TO DISCHARGE.

EAST/WEST PARKWAY CONST ℄

PROP STEEL HWY GUARD

PROP TURTLE FENCING

BIT CONC ROAD

GP–01

RDA P205

REMOVE EXIST. WOOD RAIL FROM STA 109+63 AND EASTWARD

PROP RIPRAP SWALE WITH 3/4–INCH CRUSHED STONE TO FILL VOIDS

REPOST SIGNAGE AS NEEDED

EXISTING LANDFILL

INFILL RIPRAP WITH 3/4–INCH CRUSHED STONE

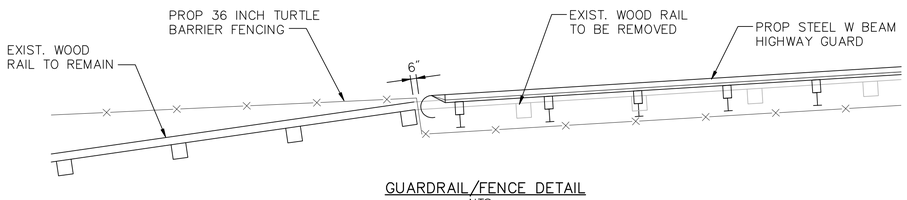
PARTIAL SECTION OF 10' CMP CULVERT TO REMAIN

OLD SWAMP RIVER RESTORATION AREA

PROP RIPRAP SWALE CONTINUATION WITH 3/4–INCH CRUSHED STONE TO FILL VOIDS

LEGEND

- LIMIT OF WORK
- LIMIT OF GRADING
- PERMANENT IC BOUNDARY
- INTERIM IC BOUNDARY
- HAY BALE & SILT FENCE BARRIER
- SILT FENCE BARRIER



GUARDRAIL/FENCE DETAIL
NTS

15 0 15 30
SCALE IN FEET

Exhibit B

Existing and Proposed Project Figures

0 40 80 Feet

Vanasse Hangen Brustlin, Inc.

Existing Conditions Oct. 20, 2011

ESD - RDA
East-West Parkway
Rockland, Massachusetts

0 40 80 Feet

Vanasse Hangen Brustlin, Inc.

Proposed Conditions Oct. 20, 2011

ESD - RDA
East-West Parkway
Rockland, Massachusetts